B. Specification

Please amend the paragraph at page 1, line 14, to page 2, line 10, as follows:

--Solid-polymer type fuel cells have a layer structure wherein a fuel electrode (anode) and an air electrode (oxidizer electrode) (cathode) hold a solid-polymer type electrolyte membrane between them. These fuel electrode and air electrode are each formed of a mixture of a catalyst, an electrolyte and a binder; the catalyst being a noble metal such as platinum, or an organometallic complex, carried (supported) on a conductive carbon. The fuel fed to the fuel electrode passes through pores in the electrode to reach the catalyst, and emits electrons by the aid of the catalyst to turn into hydrogen ions. The hydrogen ions pass through the electrolyte membrane held between both [[the]] electrodes, to reach the air electrode, and react with oxygen fed to the air electrode and with electrons flowing thereinto from an external circuit. Electrons emitted from the fuel electrode pass through the catalyst in the electrode and the conductive carbon on which the catalyst is carried, and are led out to an external circuit to flow into the air electrode from the external circuit. As the result, in the external circuit, the electrons flow from the fuel electrode toward the air electrode, where electric power is withdrawn.--.

Please amend the paragraphs at page 3, lines 4-25, as follows:

--However, in order to form the catalyst layer by the method such as printing and thereafter form the microscopic pores, it is necessary to keep a pore-forming material added previously to the ink[[,]] and remove it by baking or washing after the catalyst layer has been formed. This makes the manufacturing process ~~complicate~~

complicated, or there is a possibility that the catalytic activity deteriorates as a result of the baking or washing.

The method of forming the porous body by spray coating ~~needs no trouble such as~~ does not have problems associated with baking or washing. However, [[its]] the droplets that are forced out are so relatively [[so]] large that [[the]] large holes tend to form instead of ~~formed tend not to be~~ pores ~~but to be large holes~~ or the coating tends to ~~be in a~~ provide non-uniform coverage in some places. With an increase in diameter of the pores, the number of active sites at which the catalytic reaction takes place decreases, resulting in less electric power to be withdrawn. The non-uniformity in coverage of such an electricity-generating catalyst may also cause scattering (non-uniformity) in electricity-generating efficiency in some places.--

Please amend the paragraphs at page 6, lines 12-19, as follows:

--~~In the~~ The above manufacturing process[[, it]] may also ~~concern a manufacturing process for~~ be relevant in connection with a solid-polymer type fuel cell, in which the electrode catalyst composition is ejected in a droplet quantity of from 1 pl to 100 pl each time.

The present invention [[is]] also provides a fuel cell apparatus having the fuel cell manufactured by the above process.--

Please amend the paragraph at page 8, lines 6-15, as follows:

--As the polymer electrolyte membrane 1, what may preferably be used is a perfluorosulfonic-acid polymer film as typified by a NAFION membrane, available from ~~Du Pont~~ DuPont, or a hydrocarbon membrane available from Hoechst. Without limitation thereto, however, also widely usable are polymer membranes with a functional group having a hydrogen ion conductivity, as exemplified by a sulfonic acid group, a sulfinic acid group, a carboxylic acid group or a phosphonic acid group.--

Please amend the paragraphs at page 8, line 22, to page 9, line 12, as follows:

--The electrode catalyst layer 2a on the fuel electrode side may be formed of an electrode catalyst of a conductive carbon, [[on]] which carries at least a platinum catalyst ~~has been carried~~.

The platinum catalyst that may be used in the present invention may preferably be carried on the surface of the conductive carbon. The catalyst thus carried may preferably have a fine average particle diameter. Stated specifically, it may preferably have an average particle diameter in the range of from 0.5 nm to 20 nm, and more preferably from 1 nm to 10 nm. If it has an average particle diameter of less than 0.5 nm, catalyst particles alone may have [[so]] such a high activity ~~as to be handled with difficulty~~ that the catalyst becomes difficult to handle. If it has an average particle diameter of more than 20 nm, the decrease in the surface area of the catalyst ~~has so~~ is sufficiently small ~~surface area as to come~~ to result in a loss of reactive sites, so that there is a possibility of a lowering [[of]] the activity.--

Please amend the paragraph at page 10, lines 2-15, as follows:

--As methods by which the catalyst is carried on conductive carbon particle surfaces, known methods may widely be used. For example, a method is known in which the conductive carbon is impregnated with a melt of a noble metal used as the catalyst, specifically platinum and ~~other~~ another metal, and thereafter these noble metal ions are reduced so as to be carried on the conductive carbon particle surfaces (a wet process), including methods disclosed in Japanese Patent Applications Laid-Open No. H02-111440 and No. 2000-113712. Also, the noble metal to be carried may be set as a target so that it is carried on the conductive carbon particle surfaces by vacuum film formation (a dry process).--

Please amend the paragraphs at page 11, line 26, to page 12, line 7, as follows:

--[[As a]] A preferable solvent[[, it]] may include, e.g., butyl alcohol, isopropyl alcohol, ethoxyl alcohol, pentyl alcohol, butyl acetate, glycerol and diethylene glycol.

The electrode catalyst composition thus prepared is ejected to the surface(s) of the polymer electrolyte membrane and/or diffusion layer(s) by an ink-jet process making use of an ink-jet apparatus, [[thus]] forming pixels ~~are formed~~.--

Please amend the paragraphs at page 12, line 24, to page 13, line 12, as follows:

--In forming the electrode catalyst layers by means of the ink-jet apparatus, ~~it may unwantedly occur that~~ the layer thickness ~~comes~~ may undesirably become non-uniform in the same pixel or uncoated regions [[are]] may be formed. Accordingly, it is preferable to eject the electrode catalyst composition at least twice in the same pixel.

The electrode catalyst composition may be ejected in a droplet quantity in the range of from 1 pl to 100 pl, and preferably from 1 pl to 60 pl, each time. If its droplet quantity is less than 1 pl, although there is no problem [[on]] with the required fuel cell performance ~~required as the fuel cell~~, it takes [[a]] time to form pixels, resulting in a rise in manufacturing cost. If, on the other hand, its droplet quantity is more than 100 pl, the pores ~~come to~~ have a large diameter, resulting in a low electricity generation efficiency.--

Please amend the paragraphs at page 14, line 19, to page 15, line 9, as follows:

--The diffusion layers 3a and 3b can uniformly introduce into the electrode catalyst layers the fuel such as hydrogen, reformed hydrogen, methanol and dimethyl ether and the oxidizing agent such as air and oxygen, and can also [[comes]] come into contact with the electrodes to interchange electrons. What is commonly preferred is a conductive porous membrane~~, and used is carbon~~. Carbon paper, carbon cloth or a composite sheet of carbon and polytetrafluoroethylene may be used.

The surfaces and pore interiors of the diffusion layers may be coated with a fluorine type coating material to [[make]] carry out a water repellency treatment.

As the electrodes 4a and 4b, those used conventionally may be used without any particular limitations as long as they can feed the fuel and oxidizing agent to the respective diffusion layers [[in]] with a good efficiency and [[also]] can deliver and receive electrons to and from the diffusion layers.--

Please amend the paragraph at page 21, lines 14-21, as follows:

--In the Examples of the present invention, any steps of washing, baking and the like were not carried out after the electrode catalyst composition was ejected. Also, in the Examples of the present invention, the electrode catalyst composition was used only for the portion corresponding to the size of each pixel. In the Comparative Examples, however, the electrode catalyst deposited on the mask ~~came wasteful~~ was wasted.--